

ABSTRACT OF THE DISCLOSURE

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An integrated circuit implementing a storage-shelf router used alone, or in combination with other storage-shelf routers, and in combination with path controller cards, to interconnect the disks within a storage shelf or disk array to a high-bandwidth communications medium, such as an FC arbitrated loop, through which data is exchanged between the individual disk drives of the storage shelf and a disk-array controller. A set of interconnected storage-shelf routers within a storage shelf can be accessed through a single port of an FC arbitrated loop or other high-bandwidth communications medium. Because, in one implementation, eight storage-shelf routers can be interconnected within a storage shelf to provide highly available interconnection of sixty-four disk drives within the storage shelf to an FC arbitrated loop via a single FC-arbitrated-loop port, a single FC arbitrated loop including a disk-array controller, may interconnect 8,000 individual disk drives to the disk-array controller within a disk array. The storage-shelf router can serve to translate FC-based communications protocols into one or more communication protocols appropriate to the internal links, providing for use of less expensive, non-FC-compatible disk drives within the storage shelf.

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